DOCUMENT RESUME

ED 451 219 TM 032 447

TITLE	Progress towards the 95% Goal: 2000. Measuring Up. E&R Report.
INSTITUTION	Wake County Public School System, Raleigh, NC. Dept. of Evaluation and Research.
REPORT NO	RR-01.04
PUB DATE	2000-10-00
NOTE	12p.
PUB TYPE	Numerical/Quantitative Data (110) -- Reports - Evaluative (142)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Academic Achievement; *Achievement Gains; *Educational Objectives; Elementary Education; *Elementary School Students; Low Income Groups; *Minority Groups; State Programs; Testing Programs
IDENTIFIERS	North Carolina End of Grade Testing Program; *Wake County Public School System NC

ABSTRACT

In 1998 the Wake County Public School System adopted a goal of having 95% of all students tested at or above grade levels as measured by the North Carolina End-of-Grade (EOG) tests by 2003. This bulletin reports progress toward that goal. Analysis of the EOG test results for 1999-2000 show that scores on all four tests targeted by the 2003 goal were higher than before, but that current rates of improvement are not adequate to reach the goal. The highest percentage of students scoring below grade level were from low-income families or were African American or Hispanic students, or were identified as learning disabled or behaviorally or emotionally handicapped. The strongest predictor of low achievement was income as measured by eligibility for free or reduced price lunch. Four appendixes present information about achievement in chart form. (Contains 13 figures.) (SLD)

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ED 451 219

MEASURING UP

October, 2000

E&R Report No. 01.04

Progress Towards the 95% Goal: 2000

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Wake County Public Schools

Evaluation and Research Department

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MEASURING UP

WAKE COUNTY PUBLIC SCHOOLS EVALUATION AND RESEARCH DEPARTMENT

E&R Report No. 01.04 October 2000

Progress Towards the 95% Goal: 2000

In August, 1998, the Wake County Board of Education adopted the following goal statement: ***"By 2003, 95% of students tested will be at or above grade level as measured by NC EOG testing at grades 3 and 8."*** This goal has become the focus for alignment of school improvement efforts, community involvement, and resource allocation. This report operationally defines the goal and terms used to describe it, identifies improvement that has occurred, and disaggregates the current level of achievement for a variety of groups.

What Do We Mean By "At or Above Grade Level"?

Student scores on EOG tests are reported on scales that are divided into four levels. Students scoring in Levels I and II probably lack some basic skills needed for success at the next grade level and are considered to be scoring below grade level. Students scoring in Levels III and IV probably have the skills needed for success in the next grade level and are "at or above grade level." North Carolina students take End-of-Grade (EOG) tests in Reading and Mathematics in grades 3 and 8. Therefore, there are really *four* targets for achievement articulated in the goal statement. The Board of Education wants at least 95% of students tested to be at or above grade level in the 2002-03 school year on the tests for**: third grade reading, eighth grade reading, third grade math, and eighth grade math.**

Report Summary

Analysis of EOG test results for 1999-2000 shows that:

- Scores on all four tests targeted by the 2003 Goal were higher than ever before.
- Current rates of improvement are inadequate to reach the goal.
- The groups which have the highest percentage of students scoring below grade level are students from low income families, African-American and Hispanic students, and students identified as learning disabled or behaviorally/emotionally handicapped.
- The strongest predictor of low achievement is income, as measured by eligibility for free or reduced price lunch. Approximately 52% of students qualifying for the school lunch program scored in Levels I or II.
- On average, students who qualify for the free or reduced lunch program (FRL) show smaller academic gains than other students and are three years behind their non-FRL peers in middle school.

Progress Over Time

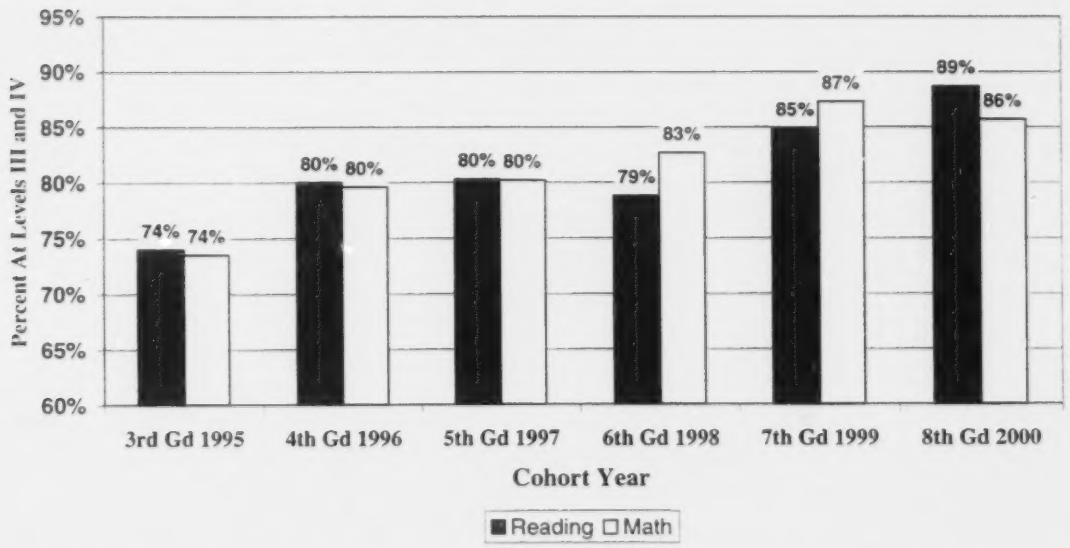
EOG tests were first given in 1993. During the past seven years, WCPSS has shown gradual improvement in the percentage of students at or above grade level, as shown in Figure 1.

Figure 1: Percent of WCPSS EOG Scores "at or above grade level"

	Reading		Mathematics	
	Grade Three	Grade Eight	Grade Three	Grade Eight
1993	74.0	76.0	72.0	75.0
1994	71.4	78.7	71.8	74.3
1995	74.4	84.0	73.5	83.2
1996	76.3	82.8	76.9	80.6
1997	75.3	83.3	76.8	79.0
1998	79.3	86.4	75.4	83.2
1999	80.4	87.1	77.1	83.8
2000	83.1	88.7	80.0	85.7

Improvement Across Cohorts. Part of the variation in test scores from year to year is due to differences in each cohort of students. Third-grade students one year may be different in important ways from third-grade students the following year. Following a cohort of students as they move up through the grade levels is one important way of looking for improvement. As shown in Figure 2, a majority of the eighth-grade students in 2000 were in third grade in 1995. The percent of students in that cohort who were at or above grade level in reading improved from 74% in 1994 to 89% in 1999. In mathematics, the improvement was from 74% to 86%.

Figure 2: Cohort Percent In Levels III and IV Over Time



Rate of Improvement. Another way to assess progress is to examine how much achievement in the district would improve if current rates of improvement continue for three years (to 2003). Rates are difficult to anticipate because improvement during the past seven years has not been steady. Gains in the mid-1990s probably resulted from implementation of financial incentives and sanctions tied to the state's ABCs accountability plan. Gains from 1998 to 2000 were probably related to adoption of the 2003 goal and intervention efforts such as the Accelerated Learning Program (ALP). Gains between 1998 and 2000 may be the best indicator of the "new" rate of improvement, assuming current resources and strategies continue to be provided. The 1998 to 2000 reading improvements rates were 1.9% and 1.2 % per year in grades 3 and 8, respectively, while the math gains were 2.3% and 1.3% per year, respectively. At this rate of improvement, scores for 2003 would be approximately those reported in Figure 3. *As shown, current rates of improvement are not adequate to reach 95% by 2003.* It should be noted that additional resources are being provided for the 2000-2001 school year and the rate of improvement may increase.

Figure 3. Projected Percentages at Grade Level for 2003
(assuming no changes in rate of improvement)

Reading		Mathematics	
Grade 3	Grade 8	Grade 3	Grade 8
88.8%	92.2%	86.9%	89.5%

Who is Tested?

The phrase "at least 95% of students tested" implies that some students will not be tested, and, in fact, every year some students are exempted from EOG testing for two possible reasons:

1. Students with limited English proficiency (LEP) may be exempted from EOG testing for the first two years they are served by a North Carolina school. After two years, students must take the test, regardless of their English proficiency.

2. Students with educational disabilities may have Individual Education Programs (IEPs) that indicate that EOG standardized testing is inappropriate. IEPs exempting students from testing are written by school-based teams that include students' parents.

Beginning with tests administered in the 2000-2001 school year, IEPs will no longer exempt students from testing. In accordance with federal law, all students must be tested. Increased testing modifications will be allowed, including a new computer adaptive test form that will adjust the difficulty of questions to the ability of the student. The impact of this change on districtwide test results is unknown, but it is likely to make accomplishment of the 2003 Goal (as currently written) more difficult because the number "of students tested" will increase through the addition of students with learning difficulties.

A few students each year are absent from testing and cannot be scheduled for a makeup test before the end of the school year. Absence rates are larger in middle schools because of suspensions and truancy. Figure 4 shows that between 4.1% and 5.2% of students were exempted or absent from one or both of the EOG tests given in 2000, and were not tested. A comparison of years in Figure 4 shows that absenteeism and exemptions increased slightly from 1998 to 2000.

Figure 4: Percentage Of WCPSS Students Exempted or Absent From EOG Tests

Grade Level	Enrollment	Test	Total Tested	IEP Exempted	LEP Exempted	Absent	Percent Not Tested
Grade 3 2000	8,195	Reading	94.82%	3.08%	1.73%	0.37%	5.20%
		Math	95.33%	2.54%	1.70%	0.44%	4.70%
Grade 8 2000	7,044	Reading	95.75%	1.99%	1.22%	1.05%	4.20%
		Math	95.92%	1.99%	1.11%	0.99%	4.10%
Grade 3 1999	7,993	Reading	95.20%	2.99%	1.54%	0.28%	4.80%
		Math	95.51%	2.73%	1.49%	0.28%	4.50%
Grade 8 1999	6,822	Reading	96.54%	1.38%	1.04%	1.04%	3.50%
		Math	96.70%	1.36%	1.01%	0.92%	3.30%
Grade 3 1998	7,781	Reading	96.00%	2.63%	1.13%	0.23%	4.00%
		Math	96.30%	2.40%	1.07%	0.23%	3.60%
Grade 8 1998	6,496	Reading	97.26%	1.23%	0.74%	0.77%	2.70%
		Math	97.21%	1.25%	0.79%	0.75%	2.70%

Under the North Carolina ABCs Accountability Program, schools are required to test at least 98% of eligible (non-exempted) students. Schools failing to test at least 98% of eligible students lose their incentive awards. While there is no specific limit regarding the number of students who are exempted under the IEP or LEP provisions, schools with high numbers of exemptions are required to explain their exemptions and may be audited to make sure proper procedures were followed in granting the exemptions.

Who is Below Grade Level?

Students scoring below grade level on EOG tests need special assistance so they can accelerate their growth and reach grade level in subsequent years. The number of students needing special assistance has both policy and financial implications. Students may be below grade level on ***one*** of the tests and not the other, or they may be below grade level on ***both*** tests. When both tests (Reading and Mathematics) are examined together, the total number of students needing help is greater than the number of students below grade level on either one of the tests alone.

The characteristics of Level I and II students in grades 3-8 in spring 2000 were as follows:

- 55 % were male,
- 59% were African-American,
- 51% qualified for FRL,
- 34% were in a special program other than Academically Gifted (Non-AG),
- 21% were identified as Learning Disabled.

Figure 5 shows that this distribution changed very little over the past three years.

Under the Accelerated Learning Program implemented in 1999-2000, schools organized extended school days, Saturday Academies, tutor/mentor programs, special classes, and other forms of intervention. These interventions were intended to move students towards the goal. One important indicator of progress will be whether the numbers of students in all subgroups

who score in Level I and II grow smaller over time. Figure 6 shows the number of Level I and II students in five key subgroups for the past three years.

Figure 5: Percentage of All Level I or II Students Who Are In Five Subgroups

	1998	1999	2000
Number of Level I & II	10,046	9,422	9,183
Male	54%	54%	55%
African-American	57%	58%	59%
Free/Reduced Lunch	50%	51%	51%
Learning Disabled	21%	22%	21%
Any Non-AG Special Program	33%	34%	34%

Figure 6: Number of Level I and II Students In Five Subgroups

	1998	1999	2000
Number of Level I & II	10,046	9,422	9,183
Male	5,379	5,114	5,093
African-American	5,702	5,446	5,416
Free/Reduced Lunch	5,025	4,810	4,700
Learning Disabled	2,099	2,053	1,935
Any Non-AG Special Program	3,283	3,248	3,093

Figures 7 and 8 show the mix of WCPSS students that populated Levels I and II at the end of the 1999-2000 school year in more detail.

Figure 7: Number of Students in Levels I or II On EOG Reading or Math Tests At The End Of 1999-2000

		Grade 3	Grade 8	Grades 3-8
All Students		1,929	1,170	9,183
Income	**F/R Lunch**	1,043	517	4,700
	Not F/R Lunch	886	656	4,483
Gender	**Male**	1,023	669	5,093
	Female	906	504	4,090
Race	**White**	597	382	2,935
	African-American	1,145	678	5,416
	Hispanic	114	70	525
	Asian	27	24	145
	Native American	4	3	30
	Other	42	15	132
Special Programs (Not Exempt From Testing)	**LD**	288	291	1,935
	B/EH	17	53	258
	Speech/Language	53	3	134
	All S.P. (not AG)	501	459	3,093

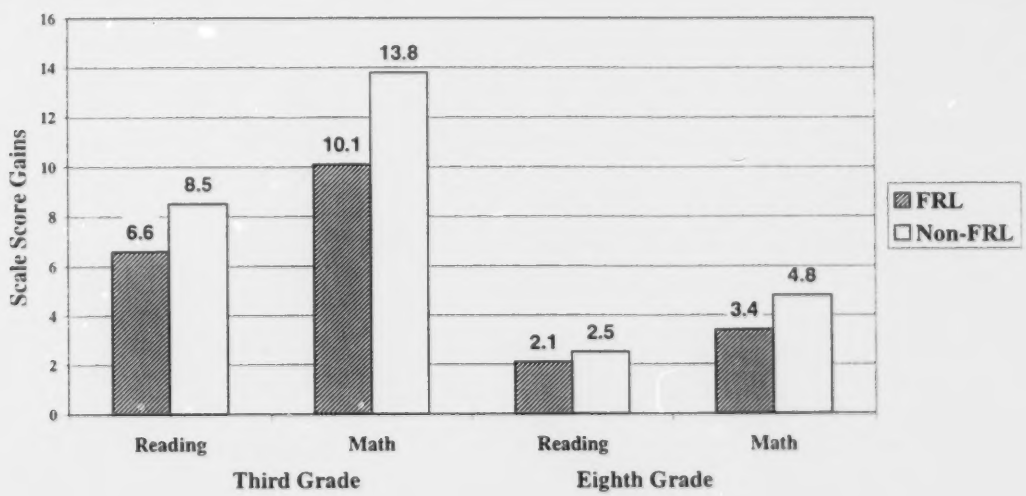
Figure 8: Percentage of Students From Each Subgroup Who Scored In Levels I or II On EOG Reading or Math Tests At The End Of 1999-2000

		Grade 3	Grade 8	Grade 3-8
All Students		25%	17%	25%
Income	F/R Lunch	57%	46%	52%
	Not F/R Lunch	15%	12%	13%
Gender	Male	26%	20%	23%
	Female	23%	15%	19%
Race	White	12%	8%	10%
	Black	56%	41%	48%
	Hispanic	44%	41%	39%
	Asian	9%	10%	9%
	Native American	21%	25%	25%
	Other	27%	23%	23%
Special Programs (Not Exempt From Testing)	LD	54%	50%	51%
	B/EH	100%	72%	73%
	Speech/Language	24%	22%	31%
	All S.P. (not AG)	49%	51%	51%

The Challenge Of Low-Income

As shown in Figure 5, more than half of Level I and II students qualify to receive Free or Reduced price lunches (FRL) because of low family income. A family of four had to earn less than $2,575 per month in 1999-2000 for a child to qualify for the school lunch program. As shown below in Figure 9, average academic gains (as measured by average EOG scale scores) were lower for FRL program students than for Non-FRL students on all four measures for goal 2003. (Note that gains are expected to be less in grade 8 than in grade 3 because of the structure of the scale developed for reporting EOG results.)

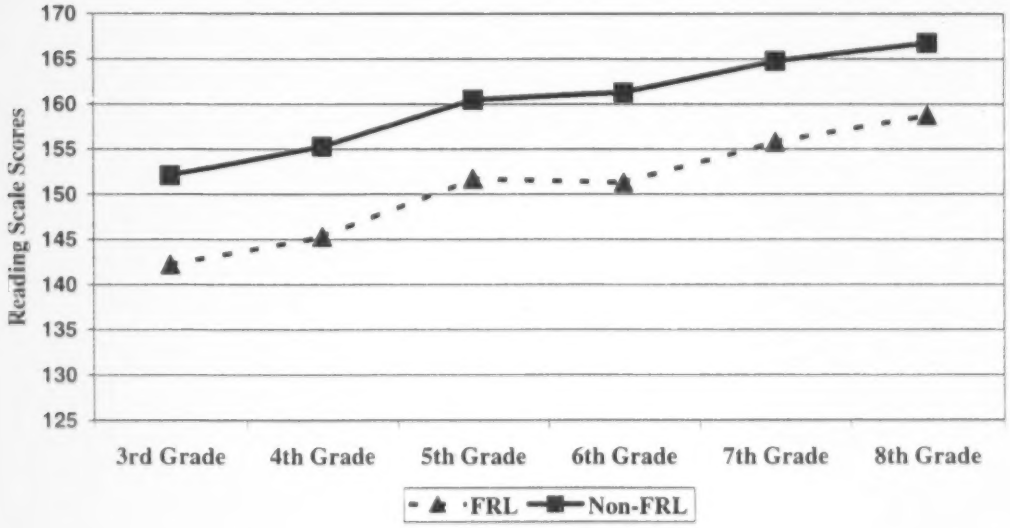
Figure 9: Average Scale Score Gains For FRL and Non-FRL Students From 1999 To 2000



Students not eligible for free or reduced price lunches (Non-FRL) showed gains last year that were, on average, approximately 20% higher than students who qualified for lunch assistance (FRL). This means that if the average FRL student grew ten months in their reading skills during the year, an average Non-FRL student grew 12 months. The impact of this differential growth rate can be seen in the following two figures.

Figure 10 shows the average Reading scale scores for FRL and Non-FRL students in WCPSS at the end of the 1999-2000 school year. The overall scale score gap remains about the same across the grade levels—ranging from 8-10 points.

Figure 10: Average WCPSS Reading Scores In 2000 For FRL and Non-FRL Students



However, the amount of growth that students are expected to make on the EOG Reading scale is not constant from grade to grade. Elementary school students move up the scale more quickly than middle school students. Figure 11 shows the size of the gap in scale score points, the average gains that are expected of WCPSS students at each grade level, and how many additional years of instruction at each grade that would be required for FRL students to close the gap.

Figure 11: The Reading Instructional "Gap" Between FRL and Non-FRL Students

Grade Level	3rd	4th	5th	6th	7th	8th
Reading Scale Score "Gap"	9.9	10.0	8.8	10.0	8.5	8.0
Average Scale Score Gain Per Grade	6.4	4.0	4.3	2.9	2.9	2.7
Years Behind	***1.5***	***2.5***	***2.0***	***3.4***	***2.9***	***3.0***

As shown, the average 3rd grade FRL students would need approximately 1.5 additional years of instruction to equal the reading achievement of the average Non-FRL third grader. The gap widens over time so that the average FRL student in middle school would need more than three years of additional instruction.

While FRL students as a group are clearly not gaining reading skills at the same rate as Non-FRL students, we should remember that generalizations hide the success of some students. As shown in Figure 12, thousands of FRL students achieved Level III and IV scores in reading last year.

Figure 12: EOG Reading Achievement Levels For WCPSS Students In Grades 3-8

	EOG Reading Test Achievement Level			
	Level I	Level II	Level III	Level IV
All Students	1,448	5,658	15,378	21,501
Free/Reduced Lunch Students	933	2,880	3,814	1,355
African-Americans	998	3,284	5,036	1,971
Learning Disabled	480	1,140	1,361	735

Summary: How Close Are We To The 2003 Goal?

Figure 13 shows the school system's progress toward the 95% goal for various subgroups as of the end of the 1999-2000 school year. We are already achieving the 2003 Goal with some groups of students and we are close to the goal with other groups.

Poverty (as measured by eligibility for free or reduced price lunch) is the single strongest predictor of low student achievement. FRL students generate more than half of our district's below-grade level test scores. Achievement of the 2003 goal will be determined by whether or not we can, both as a school district and as a community, develop better ways of serving this population and nurturing faster academic growth for these students.

Figure 13: Percent of EOG Reading and Math Scores At or Above Grade Level For Selected Demographic Groups

Subgroups			Third Grade		Eighth Grade	
			Reading	Math	Reading	Math
Students Not Receiving Free or Reduced Price Lunches	Males	White	93%	93%	94%	93%
		Black	69%	61%	77%	70%
		Asian	93%	95%	97%	93%
		Hispanic	88%	90%	65%	71%
	Females	White	95%	93%	97%	96%
		Black	78%	65%	86%	75%
		Asian	93%	96%	97%	97%
		Hispanic	80%	73%	87%	87%
Students Receiving Free or Reduced Price Lunches	Males	White	71%	73%	76%	74%
		Black	45%	44%	57%	53%
		Asian	100%	95%	67%	91%
		Hispanic	48%	58%	58%	55%
	Females	White	79%	73%	85%	81%
		Black	58%	45%	69%	60%
		Asian	78%	83%	75%	81%
		Hispanic	63%	57%	59%	50%

Appendix A

Number of Students in Levels I or II on EOG Reading or Math Tests In 1998 and 1999							
		Grade 3		Grade 8		Grade 3-8	
		1998	1999	1998	1999	1998	1999
All Students		2,222	2,146	1,269	1,308	10,046	9,422
Income	F/R Lunch	1,136	1,116	609	592	5,025	4,810
	Not F/R Lunch	1,086	1,030	660	716	5,021	4,612
Gender	Male	1,147	1,163	705	708	5,379	5,114
	Female	1,075	983	564	600	4,667	4,308
Race	White	862	818	451	434	3,708	3,279
	Black	1,210	1,157	743	801	5,702	5,446
	Hispanic	98	103	40	43	392	435
	Asian	34	30	27	19	150	143
	Native American	7	5	3	1	29	22
	Other	11	33	5	10	65	97
Special Programs	LD	366	367	303	315	2,105	2,055
	B/EH	33	34	68	59	298	281
	Speech/Language	100	73	13	13	226	191

Appendix B

Percent of EOG Reading and Math Scores At or Above Grade Level In 1998 and 1999 For Selected Demographic Groups									
			Third Grade				Eighth Grade			
			Reading		Math		Reading		Math	
			1998	1999	1998	1999	1998	1999	1998	1999
Students Not Receiving Free or Reduced Price Lunches	Males	White	89%	90%	89%	90%	93%	95%	93%	94%
		Black	65%	67%	57%	63%	73%	72%	66%	64%
		Asian	97%	88%	93%	96%	96%	96%	96%	97%
		Hispanic	90%	75%	72%	82%	76%	81%	82%	81%
	Females	White	93%	92%	90%	89%	96%	96%	95%	94%
		Black	71%	81%	61%	68%	83%	81%	74%	70%
		Asian	97%	96%	87%	96%	94%	97%	88%	98%
		Hispanic	79%	81%	75%	79%	89%	94%	74%	90%
Students Receiving Free or Reduced Price Lunches	Males	White	67%	69%	65%	63%	70%	80%	67%	78%
		Black	42%	41%	36%	36%	51%	51%	39%	41%
		Asian	74%	72%	83%	84%	78%	71%	82%	86%
		Hispanic	56%	48%	42%	45%	67%	35%	74%	44%
	Females	White	67%	73%	58%	69%	80%	85%	71%	82%
		Black	51%	53%	38%	43%	62%	59%	51%	51%
		Asian	67%	80%	69%	87%	60%	73%	100%	80%
		Hispanic	46%	55%	46%	56%	72%	83%	66%	54%

Appendix C

Third Grade Reading and Math Scores Below Grade Level In 1998 and 1999									
		Third Grade Reading				Third Grade Math			
		# of Students		Percent of Group		# of Students		Percent of Group	
		1998	1999	1998	1999	1998	1999	1998	1999
All Students		1,526	1,490	20.5%	19.6%	1,829	1,748	24.5%	22.9%
Income	F/R	841	826	47.9%	46.2%	989	948	55.9%	52.5%
	Not F/R	685	664	12.1%	11.4%	840	800	14.8%	13.7%
Gender	Male	831	858	22.3%	21.8%	924	925	24.6%	23.4%
	Female	695	632	18.8%	17.2%	905	823	24.4%	22.3%
Race	White	565	526	11.2%	10.5%	650	617	12.9%	12.3%
	Black	866	837	45.4%	42.3%	1,050	1,001	54.7%	50.3%
	Hispanic	68	78	36.8%	37.1%	84	80	44.4%	36.9%
	Asian	17	28	7.1%	10.5%	28	16	11.6%	6.0%
	Nat Amer	3	3	15.8%	13.0%	7	4	36.8%	16.7%
	Other	7	18	12.5%	15.5%	10	30	17.9%	25.6%
Special Programs	LD	303	307	57.7%	56.0%	289	276	53.1%	48.8%
	B/EH	29	28	70.7%	58.3%	24	30	57.1%	60.0%
	SI/LI	81	54	29.6%	19.6%	82	61	29.9%	22.2%

Appendix D

Eighth Grade Reading and Math Scores Below Grade Level In 1998 and 1999									
		Eighth Grade Reading				Eighth Grade Math			
		# of Students		Percent of Group		# of Students		Percent of Group	
		1998	1999	1998	1999	1998	1999	1998	1999
All Students		841	849	13.4%	12.9%	1,041	1,065	16.6%	16.1%
Income	F/R	428	420	38.2%	38.5%	524	493	46.9%	45.2%
	Not F/R	413	429	8.0%	7.8%	517	572	10.0%	10.4%
Gender	Male	500	487	15.8%	14.6%	571	563	18.0%	16.8%
	Female	341	362	10.9%	11.1%	470	502	15.1%	15.4%
Race	White	292	252	6.6%	5.5%	335	319	7.6%	6.9%
	Black	499	545	33.0%	33.7%	651	693	43.1%	42.8%
	Hispanic	29	28	24.4%	24.6%	31	34	26.1%	29.6%
	Asian	16	17	8.4%	7.8%	16	11	8.4%	5.0%
	Nat Amer	2	0	16.7%	0%	3	1	25.0%	7.7%
	Other	3	7	11.1%	17.1%	5	7	19.2%	17.5%
Special Programs	LD	241	243	44.1%	42.3%	263	259	49.3%	48.3%
	B/EH	53	43	63.1%	55.8%	61	50	73.5%	65.8%
	SI/LI	10	11	66.7%	64.7%	12	12	80.0%	70.6%